DOCUMENT RESUME

ED 192 695 HE 013 180

AUTHOR West, Peter C.
TITLE A Survey and Report of Interest in and Availability of Systems for the Delivery of Instruction by Remote Methods.
INSTITUTION Rockford Regional Academic Center, Ill.
PUB DATE Sep 80
NOTE 54p.
AVAILABLE FROM Rockford Regional Academic Center, 215 N. Wyman St., Rockford, IL 61101

EDRS PRICE MF01/PC03 Plus Postage.
DESCRIPTORS Academic Education; *Access to Education; Adult Students; Continuing Education; *Delivery Systems; Educational Demand; *Educational Technology; Educational Television; *Extension Education; External Degree Programs; Graduate Study; Postsecondary Education; Public Opinion; *Regional Planning; *School Business Relationship; Surveys
IDENTIFIERS *Illinois (Rockford)

ABSTRACT

In 1979 the Rockford Regional Academic Center formed a task force to examine the feasibility of providing upper division and graduate level instruction in the Rockford, Illinois area by "remote delivery." The objective was to gather information about: (1) what remote delivery instructional systems are available; (2) what the physical considerations and costs associated with these systems are; (3) what the public interest in these systems is for business and industrial use, individual use, and community use; (4) how the programs can benefit the specific geographic and demographic situation; and (5) how the existing educational institutions perceive their role in using these systems. Data were gathered by literature search, consulting manufacturers and their catalogs, a general opinion survey and interviews with businessmen and educational representatives, and visits to two universities providing remote instruction. It is recommended that institutions build on the university systems already in use, avoiding duplication when possible, expand the curriculum of available courses to those recommended by respondents, offer courses by a variety of remote methods, and consider applying for a grant to expand the systems available. Use of satellite delivery is rejected because of its cost, and an interactive television system with talk-back is the preferred method, though not the most practical. The general opinion questionnaires are appended. (MSE)

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REMOTE DELIVERY STUDY

U S DEPARTMENT OF HEALTH,
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NATIONAL INSTITUTE OF
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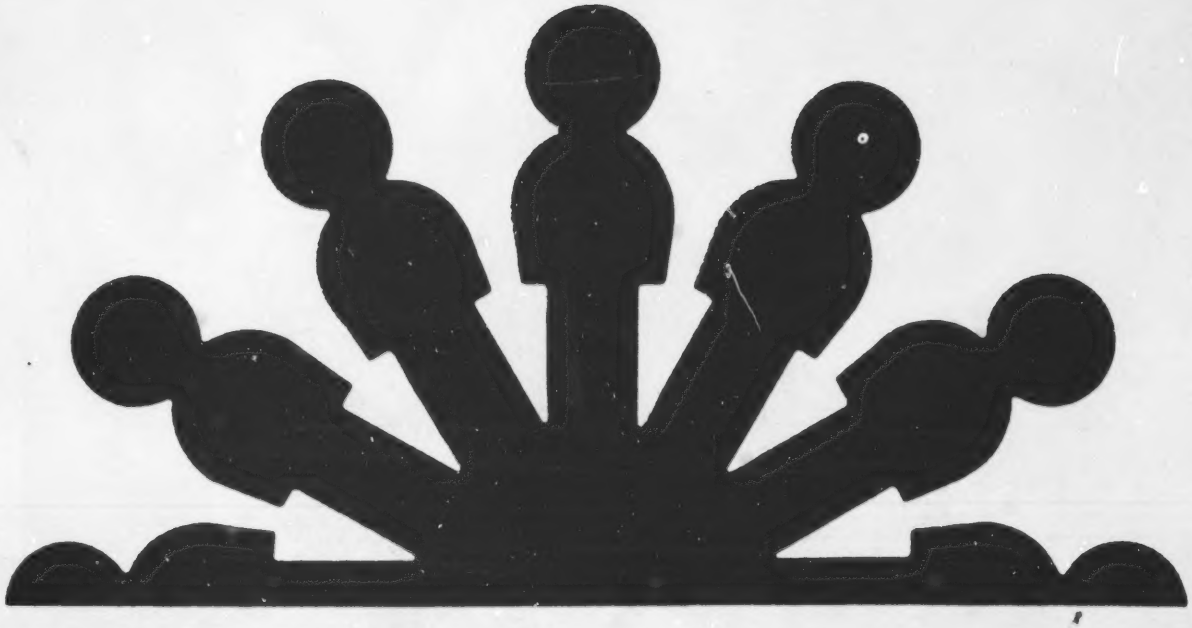

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A SURVEY AND REPORT OF INTEREST IN AND AVAILABILITY OF SYSTEMS FOR THE DELIVERY OF INSTRUCTION BY REMOTE METHODS

CONDUCTED FOR
REMOTE DELIVERY TASK FORCE
ROCKFORD REGIONAL ACADEMIC CENTER

ROCKFORD, ILLINOIS

PREPARED BY
PETER C. WEST
NORTHERN ILLINOIS UNIVERSITY

SEPTEMBER, 1980

LEARNING CENTER
NORTHERN ILLINOIS UNIVERSITY
GABEL 8
DEKALB, IL 60115

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PREFACE

MANY ADULTS IN THE ROCKFORD AREA ARE INTERESTED IN PURSUING HIGHER EDUCATION. HOWEVER, THEY FIND THAT THE EDUCATION THEY WANT OR NEED CANNOT BE OBTAINED CONVENTIONALLY FROM COLLEGES AND UNIVERSITIES. TO ACCOMMODATE THEIR SCHEDULES AND PRECLUDE TRAVELING GREAT DISTANCES, IT HAS BECOME OBVIOUS THAT POTENTIAL STUDENTS CAN BE SERVED ONLY IF AN ADEQUATE REMOTE INSTRUCTIONAL TECHNIQUE EXISTS TO SUPPLEMENT THE SERVICES OF LIVE FACULTY MEMBERS FROM NEARBY CAMPUSES.

THE NEEDS SURVEY CONDUCTED FOR THE RRAC IN 1973 BY BOOZ-ALLEN-HAMILTON PRESENTED DATA WHICH, TOGETHER WITH DEMOGRAPHIC SURVEY INFORMATION, INDICATED A LOCAL NEED ALMOST FOUR TIMES THE NUMBER OF ENROLLMENTS WE PRESENTLY ARE EXPERIENCING AT THE GRADUATE LEVEL ALONE. IF THE RRAC IS TO FULFILL ITS STATED AND AVOWED PURPOSE OF ENCOURAGING AND ASSISTING IN BRINGING ADDITIONAL EDUCATIONAL OPPORTUNITIES AT THE UPPER DIVISION AND GRADUATE LEVELS TO AREA RESIDENTS, WE MUST BE DELIBERATE IN OUR EFFORTS TO SEEK ALTERNATIVE INSTRUCTIONAL SERVICES.

ENROLLMENTS IN UNIVERSITY CLASSES IN ROCKFORD HAVE SHOWN ENCOURAGING INCREASES IN THE PAST THREE YEARS. STILL, THE NUMBER OF CLASS OFFERINGS IS MODEST COMPARED TO THE POTENTIAL THAT EXISTS. THIS MODERATE LEVEL WILL PERSIST IF WE CONTINUE TO EXPECT EXTENSION DIVISIONS TO PERSUADE FACULTY MEMBERS TO DRIVE TO OUR COMMUNITY TO TEACH.

APPLICATION OF THE TECHNOLOGY OF COMMUNICATIONS PROMISES TO HOLD THE SOLUTION TO REMOTE DELIVERY INSTRUCTIONAL NEEDS. SPECIFIC NEW TECHNOLOGIES WHICH HOLD THE GREATEST PROSPECTS ARE VIDEO CASSETTES, LIVE TELEVISION WITH TALKBACK CAPABILITIES, THE ELECTRONIC BLACKBOARD, AND HANDS-FREE TELEPHONE SETS, AMONG OTHERS.

IT WAS FOR THESE REASONS THAT THE RRAC BOARD OF DIRECTORS IN JANUARY, 1979, AUTHORIZED FORMATION OF A TASK FORCE TO STUDY AND RECOMMEND ALTERNATIVE INSTRUCTIONAL DELIVERY SYSTEMS AND SERVICES. THIS REPORT IDENTIFIES PUBLIC INTEREST IN UTILIZING REMOTE DELIVERY SERVICES AS WELL AS NEW SYSTEMS, THEIR POTENTIAL COSTS AND AVAILABILITY OF CREDIT COURSES. RECOMMENDATIONS ARE ALSO PRESENTED SO THAT ACTION ITEMS MAY BE GENERATED FOR FOLLOW-UP PURPOSES. SOME ITEMS WERE BEING INITIATED EVEN BEFORE THE REPORT WAS COMPLETED.

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CONSIDERING THE RAPID GROWTH POTENTIAL OF STUDENT ENROLLMENTS AND CURRENT EQUIPMENT INSTALLATIONS, SOME EFFORT SHOULD BE DIRECTED TOWARD CONTINUING THIS STUDY EFFORT AS AN ON-GOING REMOTE DELIVERY STUDY PROJECT.

Bill Guirl

G. W. GUIRL, CHAIRMAN
RRAC REMOTE DELIVERY TASK FORCE

SEPTEMBER, 1980

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ACKNOWLEDGEMENTS

FROM THE VERY BEGINNING, THIS STUDY HAS BEEN ENTHUSIASTICALLY SUPPORTED BY THE RRAC BOARD OF DIRECTORS AND PARTICIPATING INSTITUTIONS, THE TASK FORCE MEMBERS, OUR STUDY COORDINATOR AND HIS BOSS, OUR FINANCIAL SPONSORS, BUSINESS/INDUSTRY, EDUCATIONAL INSTITUTIONS, QUESTIONNAIRE PARTICIPANTS, AND OF COURSE, RON HALLSTROM, RRAC EXECUTIVE DIRECTOR, AND PEGGY BARES, ADMINISTRATIVE ASSISTANT. THE TASK FORCE MEMBERS DID AN OUTSTANDING JOB OF SOLICITING MONEY FROM THIER ASSIGNED COMPANIES, RESEARCHING MATERIALS AND CRITIQUING ON-GOING WORK. OUR STUDY COORDINATOR WORKED UNDER A TIGHT SCHEDULE, GIVING UP PERSONAL TIME WHEN NEEDED, BUT MOST SIGNIFICANTLY, OBTAINING FROM ALL PARTICIPANTS MATERIAL AND INFORMATION VERY USEFUL AND OF CONCERN TO THE STUDY.

IT IS APPROPRIATE TO MENTION THE COMPANIES, BUSINESSES, AND VARIOUS PERSONNEL WHO CONTRIBUTED IN SO MANY WAYS TO THE SUCCESSFUL CONCLUSION OF THIS STUDY.

FINANCIAL CONTRIBUTORS

ANDERSON BROTHERS
BARBER-COLMAN COMPANY
BELOIT CORPORATION
ELCO INDUSTRIES
HOME FEDERAL SAVINGS & LOAN
J.L. CLARK MFG. COMPANY
MICRO SWITCH, DIVISION OF HONEYWELL, INC.
ROCKFORD NEWSPAPERS
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SUNDSTRAND CORPORATION

TASK FORCE MEMBERS

MR. JAMES G. CRAGAN
MRS. GEORGE GAYLE
MR. ROBERT HARTZELL
MRS. FRANCIS HICKEY
MR. WILLIAM MOHR
MRS. EARL OELHAFEN
DR. LORNE PARKER
MR. FRANK PARRINO
MR. JIMMY SEYLER
MR. CARL STEELE
DR. HOWARD A. SWAN, JR.

SPECIAL CREDITS

TO MR. PETER WEST, STUDY COORDINATOR, FOR HIS PERSONAL TIME; THE PREPARATION, DISTRIBUTION AND ANALYSIS OF SURVEY QUESTIONNAIRES; INTERVIEW ARRANGEMENTS TOGETHER WITH PERSONAL FOLLOWUP; ATTENDANCE AT A CONFERENCE OUT OF STATE; PREPARATION OF SEVERAL DRAFTS AND PRESENTATIONS OF THIS REPORT.

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SPECIAL CREDITS (CONTINUED)

TO DR. HOWARD A. SWAN, JR., PETE WEST'S BOSS AND MENTOR, FOR HIS COOPERATION, HIS ABLE GUIDANCE AND ASSISTANCE, INCLUDING SELECTION OF THE STUDY COORDINATOR.

TO DR. EDWARD STEUBEN, ILLINOIS INSTITUTE OF TECHNOLOGY IIT/V COORDINATOR, FOR HIS ASSISTANCE AND COOPERATION IN DISTRIBUTING SURVEY QUESTIONNAIRES TO IIT/V PARTICIPANTS.

TO EACH OF THE FOLLOWING WHO SERVED SO ABLY ON THE FUND SOLICIATION TEAM: MRS. GEORGE GAYLE, MS. CHRISTINE GILL, DR. RONALD HALLSTROM, MRS. FRANCIS HICKEY, MR. ERWIN HIRSCHBERG, MR. BILL MOHR, MRS. EARL OELHAFEN, MRS. FLOYD PALM, MR. ARMER SEVERIN, MR. STEVE SJOGREN, AND MR. STEVE SYMES.

IN THE NAME OF RRAC, I EXTEND PUBLICLY OUR APPRECIATION TO ALL OF THE MEMBERS AND INSTITUTIONS OF THE RRAC FOR THEIR FORESIGHT AND SUPPORT IN THIS STUDY.

Bill Guirl

G. W. (BILL) GUIRL, CHAIRMAN
REMOTE DELIVERY TASK FORCE

SEPTEMBER, 1980

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I. BACKGROUND

In 1979 the Board of Directors of the Rockford Regional Academic Center formed a Remote Delivery Task Force to examine the feasibility of providing upper division and graduate level instruction to individuals in the Rockford, Illinois, area by "remote delivery." Remote delivery is a term adapted by the RRAC to be used in describing any system capable of transmitting information between two or more locations by any method other than face-to-face classroom instruction.

The Task Force identified specific objectives to be investigated. Those objectives were:

1. What remote delivery instructional systems and services are available?

2. What physical considerations and costs are associated with those systems?

3. What is the public interest in utilizing these remote delivery systems?

   A. Business and industrial use
   B. Individual use
   C. Community use

4. How can these systems benefit our (Rockford's) specific geographic and demographic situation?

5. How do the educational institutions now serving Rockford through the RRAC perceive their role in utilizing these systems?

The study was based on the above objectives.

II. METHODOLOGY

The following methods were used to gather data:

1. Literature searches were conducted to determine available systems for delivering instruction by remote means.

2. Manufacturers' representatives and company catalogs were consulted to determine physical considerations and associated costs of selected systems.

3. An opinion survey was developed and administered to two groups to determine public interest levels. One group was composed of individuals with no current exposure to remote delivery systems. Names of individuals in this group were drawn from two sources: (1) students currently enrolled in traditional face-to-face on-campus and extension classes in the Rockford area, and (2) from a list of individuals with at least two years of college education who have not been active in pursuing additional education in the last two years.

   The second group was composed of individuals who were enrolled in courses being delivered by one of three systems of remote delivery during the Spring semester, 1980. The three systems of remote delivery were (1) open broadcast television, (2) the electronic blackboard, and (3) interactive television via microwave.

4. In-person interviews were conducted with officials of the business/corporate community in Rockford to determine interest among that sector.

5. In-person interviews were conducted with officials of six of the seven institutions now members of the Rockford Regional Academic Center to determine what they feel their role would be in utilizing remote systems.

6. Visitations to universities providing instruction to off-campus locations by remote means.

Information generated from the above methods along with recommendations and suggestions is presented in the following sections of the study.

III. STATE OF THE ART

To provide background information on how remote systems are being used elsewhere, a brief profile of organizations currently using, or beginning to use, alternate methods of delivering instruction follows.

1. Colorado State University, Fort Collins, Colorado
   Project SURGE (State University Resources in Graduate Education)

   This program was developed by CSU to provide regularly scheduled graduate courses by means of videotape to business and industry. A CSU booklet states:

   "The courses offered in the SURGE program originate in live classrooms on the CSU campus. Videotape is used merely as a vehicle to transport the campus classroom to plant locations. This means that students at the off-campus locations get exactly the same course-work as the resident students, including the benefit of classroom questions and answers. Each classroom is equipped with a camera to follow the professor and display the blackboard. An overhead camera is used to display transparencies, illustrations, and anything the professor wishes to write.

   "Each evening, tapes recorded that day are picked up by a courier service for distribution to the various plant locations. Sessions taped on any particular day are generally used two days later at the SURGE locations at times scheduled regularly by the plant. One advantage of videotape is the flexibility in scheduling. The tapes are returned as soon as possible to CSU by means of the courier service to be used in recording subsequent sessions. Questions by off-campus students are answered by the professor via telephone. SURGE students can also ask questions during one of the professor's periodic visits to the off-campus location.

   "Examinations, quizzes, homework, and other written communications are usually delivered by the courier service. Students at the remote locations are required to perform exactly as are the resident students and are graded in the same way. Resident credit is given."

Dr. Preston Davis, Director of Instructional Services at CSU, does not feel there any real disadvantages to videotape delay courses. Even though remote students cannot communicate with the instructor during class sessions, Davis feels this is not a drawback. What might compensate for any disadvantage to remote learning is that many students in remote locations are more mature and experienced than their on-campus counterparts and thus more motivated and interested in the subject matter.

CSU enrolls approximately 500 students in the off-campus program. At the present time they have 50 remote sites. Each site must have a minimum of three people enrolled in a course. CSU has four classrooms equipped with necessary equipment to record sessions. Davis estimated the cost of equipping each classroom to be between $25,000 and $30,000.

2. Illinois Institute of Technology, Chicago, Illinois
IIT/V (Interactive Instructional Television)

This program enables individuals at off-campus locations to participate in live on-campus classes through the use of a microwave television system. About 60 credit courses in engineering, business and computer science are broadcast live to participating companies via a 10mHz signal. The off-campus students see and hear the same things as the on-campus students. Any written assignments (tests, papers, etc.) are delivered to the remote site via courier. (IIT is currently exploring the possibility of utilizing facsimile transmission to deliver paper work to remote locations.)

3. The National University Consortium for Telecommunications in Teaching

The National University Consortium is a project still in the developmental stages that will make a complete bachelor's degree program available to homebased students through television and the directed study learning system. A project brief from the Consortium states that it will "enlist, as fully participating members, local public television stations and selected colleges and universities. Wherever possible, the National University Consortium curriculum will be administered by a local college. In areas of the United States where no local colleges participate, the University of Maryland University College will enroll students utilizing tested distance learning instructional techniques."

The primary method of instruction will be directed study, which is a learning system based on readings, optional opportunities for tutor-student interaction and supplementary television programs. "The directed study method relies on television for only part of the instruction. The television programs are designed to supplement the materials presented in carefully designed course guides and in textbooks and readings."

4. The Electronic Blackboard System

The University of Illinois at Urbana-Champaign and at Chicago Circle use the electronic blackboard to deliver credit courses in engineering to sites in the state. The courses originate in live, on-campus classes and are transmitted through telephone lines to various sites. Off-campus students see on television screens the materials written on electronically sensitized blackboards in the campus classroom. Students in remote locations are able to talk to the instructor over a hands-free telephone.

The above profiles represent efforts of four organizations to provide instruction to students in off-campus locations by methods other than the traditional face-to-face extension course. Other universities and organizations also are beginning to provide educational opportunities to off-campus students by remote means. These profiles are intended only as a means of introducing those unfamiliar with remote systems to the concept and not as an endorsement of one system over another.

IV. AVAILABLE SYSTEMS

This section outlines electronic systems identified by the study coordinator and members of the Task Force as having the best potential for adoption and use by the RRAC. (A correspondence course, for example, can obviously be correctly termed a "remote delivery system," but was not considered for purposes of this study.) Specific systems that appear to be most viable for RRAC's purposes are included. A background statement by the Task Force was that "the application of the technology of communications promises to hold the solution to remote delivery instructional needs. Specific new technologies which hold the greatest prospects are video cassettes, live television with talkback capabilities, the electronic blackboard, and handsfree telephone sets, among others." Based on that statement and discussions with members of the Task Force the following systems, along with costs and physical considerations, hold the most promise for RRAC's purposes.

1. TELEVISION

A. Broadcast Television.

Two types of open broadcast television are available--national and local. National broadcasts are televised over public or commercial stations. These are primarily of general interest, not programs originally designed for educational purposes. Examples include the Ascent of Man, Shakespeare's Plays, and the Adams Chronicles.

Locally broadcast telecourses are normally produced by a cooperating college or are purchased or leased in a "package" to be aired over a local station. These courses normally have a "narrow" appeal, i.e., they are directed at a specific population (teachers, accountants, etc.).

Northern Illinois University, in cooperation with the RRAC, offered an open broadcast telecourse during the Spring of 1980 entitled, "Survival Skills for the Classroom Teacher." Channel 39 in Rockford provided one half hour of air time twice a week to broadcast the sessions. This was a "packaged" course developed by Media Five in California. Media Five leased the course to NIU on a per student basis. NIU awarded

three hours of graduate credit. Students paid a fee that covered total costs, including tuition, lease charges, and miscellaneous administrative expenses. One hundred four students in the Rockford area enrolled in the course. Students were required to attend one on-campus workshop.

After each broadcast, programs were available for viewing at the RRAC and/or NIU for review or make-up at the students' convenience.

Equipment needed and associated costs.

Air time - no charge (public service)

For play back at RRAC:

3/4" U-matic videocassette recorder/player	$2770
Sony 12" color monitor	400
Blank 30-minute videocassettes @$15 each 20 minimum	300
Blank 60-minute videocassettes @$21 each 20 minimum	420
TOTAL	$3890

Costs will vary depending on bid quote, quantity ordered, manufacturer, etc.

Availability of courses.

Courses for open broadcast television are available from two main sources. They can be produced inhouse by the cooperating university, or they can be rented (as in the NIU/RRAC remote course) or purchased from commercial sources. There is not a plethora of credit courses available commercially for upper division or graduate level instruction, though. Videotape courses are available for engineering and computer science through the Association for Media-Based Continuing Education for Engineers, Inc. (AMCEE). These courses originate at a number of universities throughout the country. If credit is to be awarded, though, it has to be awarded by the university that produces the course. In addition, restrictions oftentimes are placed on courses prohibiting them from being broadcast on open air channels. Media Five, mentioned earlier, offers several courses or "packages" for teacher training.

The National University Consortium will begin providing directed study courses (television and print modules) leading to a bachelor's degree in three interdisciplinary concentrations - behavioral and social sciences, humanities, and technology and management this fall. Dr. Adele Seeff, the project director, is attempting to locate colleges to participate. The courses would be made available to the colleges by the consortium, the college would administer and award the credit, and a local television station would broadcast the programs. There is a fee structure for participating institutions. A flat $10,000 per year fee will be charged schools serving students with NUC credit courses.

B. Cable Television

The cable system presently serving the Rockford area is Rockford Cablevision. This system has the capability of providing up to 30 channels to subscribers. At this time, 12 channels are being utilized. Cable systems in major markets are required by the Cable Television Report and Order (1972) to maintain "at least one channel each for public, educational, government and leased access." At this time channel 10 has been designated by Rockford Cablevision to be the most likely channel to be utilized for this purpose. Public Television, Inc., in Rockford will more than likely administer programming for that channel. No device is currently available for scrambling signals, so programming would be available to all cable subscribers (31,000 in the Rockford/Loves Park area).

Costs

The Public Access channel would most probably provide free air time as a public service.

Availability of courses.

Courses would have to be provided by the RRAC's member institutions on the same basis as for open broadcast.

C. ITFS (Instructional Television Fixed Service).

This is the system used by the Illinois Institute of Technology and known as IIT/V. ITFS is an omni-

directional microwave transmission system with line of sight reception extending approximately 20 miles. (This can be increased with the use of signal repeaters.) Special receiving equipment is required at the point of reception to convert the signal to broadcast television frequencies for viewing. This type of system is not intended for home use but rather for use by individuals with a common educational purpose (i.e., businesses, libraries, study centers, etc.). FCC licensing is required for broadcast purposes. In addition, ITFS systems have the capability of providing two-way audio so during live transmissions individuals can talk back to those at the signal originating point.

Equipment needed and associated costs.

2 ITFS repeaters @ approx. $100,000.00 ea.		$200,000.00
Receiving dish at each site		10,000.00
Playback equipment (Television monitors) at each site	each	400.00
Rental charges for transmission sites - unavailable		

Current problems.

At this time FCC licensing would be required to boost the signal so it would reach Rockford. This would require the services of a consultant familiar with government agencies to determine if a license would be granted and, if it were possible to get a license, the consultant would need to work on the problems involved in obtaining same.

Availability of courses.

IIT offers between 50 and 60 courses each semester over their ITFS system in engineering, business, computer science, and other disciplines. The potential would theoretically exist to offer almost any course an institution teaches over an ITFS system once that school has become equipped for transmission.

D. Satellites

Unlike ITFS transmission, satellites provide an opportunity for widely dispersed audiences to participate in "real-time" programming. For example, satellite broadcasts could bring a teacher from Champaign together simultaneously with students in numerous locations in Rockford and surrounding areas.

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Equipment needed and associated costs.

In the event the RRAC were to interest one of the cooperating institutions in providing instruction to the Rockford area via satellite, the following would be necessary:

At the transmitting location (the institution): Broadcasting live classroom instruction.

Basic television equipment per classroom:

3 cameras @$20,000-$40,000 ea.	$60,000 - $120,000
1 special effects generator	7,000 - 12,000
Lighting (minimum Ami)	2,000 - 3,000
	$69,000 - $135,000

Costs may vary depending on quality of equipment and bid prices. One classroom setup could range from $25,000 up. This cost may not be necessary, though, because most universities have television services.

If an institution does not have television services, and does not wish to invest in its own television equipment, an outside production service could be employed.

Baseline cost of classroom television set-up for satellite transmission: $5,000 up.

Satellite costs:

Non-prime time - $300 per hour
Prime time - $400-500 per hour
Uplink charge $ 60 per use
Cost of sending signal from transmitting location to nearest commercial dish: .75¢ per hr., per mile
Cost of purchasing transmitting dish to avoid .75¢ per hr. charge: $300,000

Receiving costs:

Earth station (per location)	$ 10,500
One channel reception capability, each additional channel per location	$3,500
Television monitors:	$400-500 each

Availability of courses.

Since live classroom sessions would be the primary method of instruction, most courses could be broadcast.

E. Videotape Delay

Courses for a videotape delay system would be available from either a cooperating university that recorded live on-campus classroom instruction for delivery and playback at off-campus locations, or from commercial sources that provided packaged videotape or film courses. In the latter case, a cooperating institution would need to award credit and administer the course. The former case would be similar to the Colorado State University Project SURGE.

Equipment needed and associated costs.

For cooperating institution to videotape and record live on-campus instruction:

Per classroom:

3 cameras @ $20,000 ea.	$60,000
1 special effects generator	7,000
1 recorder/player	2,770
	$69,770

Since the recorded instruction would be sent to more than one location, it would be best to record simultaneously up to ten tapes. This would require an investment of $27,770 for 10 recorder/players.

Costs again will vary depending on bid quote, quality, and quantity.

For playback at off-campus locations (businesses, study centers, etc.).

1 video player	$2,000
1 19" television monitor	800
	$2,800

Availability of courses.

The potential exists for courses in almost all disciplines to be available from any institution interested in establishing a videotape delay instructional program. The opportunity is available currently for offering videotape delay courses from the Illinois Institute of Technology. Other videotape courses are available from the University of Arizona and the Association for Media-Based Continuing Education for Engineers.

Those, then, are five options available for delivering college credit courses to the Rockford area via television. While it is true there are other television "systems" available (videodisc, for example), these five seem to be at a technological stage which makes them most viable at this time.

2. TELELECTURE/TELECONFERENCE SYSTEMS

A. The Electronic Blackboard

The electronic blackboard is a device much like a regular blackboard that transmits instructional visuals from a classroom on campus by a telephone line to extension locations. A second telephone line permits transmission of two-way audio so students in the remote location can participate in discussions with the professor and the class.

Equipment needed and associated costs.

For transmission:

Electronic blackboard $150 initial non-recurring charge, $133 per month thereafter
Transmitter-Receiver $122 per month
Display interface unit (memory) $60 initial non-recurring charge, $196 per month thereafter
Blackboard stand (optional) $63 initial non-recurring charge, $12 per month thereafter

For reception:

Video monitor	$800
Receiver	$ 84 per month
Display interface unit	$196 per month

All equipment needed for both reception and transmission also can be leased at a one-time charge of $2,038.50 and a monthly payment of $56.25 thereafter if leasing individual pieces of equipment is not suitable.

Availability of courses.

The University of Illinois at Urbana-Champaign, and the University of Illinois at Chicago Circle are currently offering engineering credit courses over the electronic blackboard. Other universities could also offer courses by this method.

B. Telephone Network System

The telephone is widely used for delivering both non-credit and credit courses to remote locations throughout the country. The University of Wisconsin has an extensive telephone network (ETN) delivering primarily continuing education sessions (non-credit) to sites in Wisconsin. The University of Illinois offers several credit courses statewide via the telephone.

Equipment needed and associated costs.

Convener (Model 611 - 4 Wire)	$503
Microphone	$ 50

Availability of courses.

The University of Illinois at Urbana-Champaign offers credit courses in Real Estate Appraisal, Sociology, Educational Psychology, and Vocational Education to name a few. Any institution could offer most courses with a telenet system.

3. COMPUTER ASSISTED INSTRUCTION

A. PLATO

PLATO (Programmed Logic for Automatic Teaching Operation) is a computer-based teaching system providing instructors with a means for individualizing coursework. Students can work at their own pace and can interact with the computer.

Equipment needed and associated costs.

At receiving site:

PLATO terminal (outright purchase)	$ 4,900 each
8 terminals (12-month lease) includes selected courses	$64,000

Availability of courses.

Courses are available from some universities (the University of Illinois, for example), from Control Data Corporation, or can be developed by individuals. Control Data has credit courses available if institutions would like to adopt them on a leased basis. Individual subscriptions are available from Control Data for $700 - $1200.

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V. INSTITUTION SUPPORT/PERCEPTION OF ROLE

In order to determine how those institutions now serving Rockford through the RRAC would perceive their role in utilizing a remote delivery system, an in-person interview was conducted with six of the seven member schools. The institutions that currently are members of the RRAC are:

-Rockford College
-Rock Valley Community College
-Northern Illinois University
-University of Illinois
-Southern Illinois University
-University of Wisconsin System
-Beloit College

1. Rockford College

Since Rockford College is located in Rockford, they would perceive of their role in a remote delivery system in somewhat of a different mode than more distant schools. First, the officials interviewed agree with the concept of remote delivery and would be interested in providing as much support to such a system as possible. Rockford College also would be interested in the "exportation" of education from Rockford to outlying areas via videotape. They indicated that at one time they made an attempt to capture classroom instruction on videotape, but that nothing more was ever done with the tapes. Interest does exist for cooperation and/or adaption of "new" programs at RC with other RRAC members.

Persons interviewed

Dr. Gordon Wesner
Vice President and Dean

Dr. Thomas Giddens
Dean of Continuing and Graduate Education

2. Rock Valley College

The only community college in the RRAC, Rock Valley is also located in Rockford, Also, since they do not offer any college credit courses at the upper division or graduate level, their role would be one of support more than actual participation. RVC can, however, deliver lower division courses by remote means and is doing so in some areas of study. They have several Adult Education Service Centers located off-campus providing instructional programs elsewhere in the Rockford area. They

perceive their role in an upper division and graduate level remote delivery instructional program as one of support, and of "feeding" students into the program.

Person interviewed

Mr. Patrick Thompson
Vice President

3. Northern Illinois University

NIU is the closest major university to Rockford and provides an opportunity to study at the upper division and graduate levels in almost all areas that individuals in the Rockford community seem to have the most interest except engineering. With the cooperation of the RRAC, a course was brought into Rockford via remote delivery (broadcast TV) this past spring and proved to be very successful. NIU would be interested in exploring the continued possibility of providing college credit courses via remote delivery as long as it would be financially feasible. With the appropriate funding, NIU would perceive its role in a remote delivery system as active, or willing to experiment.

Person interviewed

Dr. Clive Veri
Assistant to the President (Acting)

4. University of Illinois Urbana-Champaign

The University of Illinois is the largest institution in the state and provides instruction in all areas of most interest to the Rockford community including engineering. The U of I is presently offering engineering courses via remote delivery (electronic blackboard) at two locations in Rockford. They feel that a combination or co-mingling of methods is probably the best vehicle for delivering instruction to off-campus locations. They subscribe very seriously to their mission as a land grant institution that dictates the whole state of Illinois as their campus. Therefore, the statewide mission dictates policy of how they perceive their role in remote systems for delivering instruction. They have already demonstrated they are interested in remote delivery and would be interested in an expanded effort in the future based on the source of funding. The physical possibility for videotape delay delivery exists at the University of Illinois but depends on impetus.

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Persons interviewed

Dr. Peter Yankwich
Vice President of Academic Affairs

Dr. Robert Bender
Director, Statewide Programs

Dr. Jack Claar
Associate Vice President for Public Service

5. Southern Illinois University - Carbondale

SIU has an extremely active and successful program of delivering off-campus courses to locations not only in the State of Illinois but nationwide as well. These courses are taught by instructors who either fly or drive to their "classrooms." Like NIU and the U of I, SIU perceives its role in remote delivery as one having an interest in participating but with certain reservations. SIU does not want to duplicate course offerings in a geographic area and would need to know when it is appropriate to bring a course or program into a region. They currently have several courses available on videotape but are not utilizing them. They include courses on "Weather," "Political Parties," and "The Geography of Illinois."

Person interviewed

Dr. Linz Brown
Associate Dean
Continuing Education

6. University of Wisconsin

The University of Wisconsin is the only public RRAC institution member not located in Illinois. UW has a very successful remote delivery system established using the telephone (ETN). Instruction offered over this system consists primarily of continuing education programs and is non-credit. They are beginning to offer courses for credit via two-way audio in the area of vocational and home economics education and would give consideration to other course offerings. They perceive their role in a remote delivery system for the RRAC as nominal. They would be willing to help, but not really promote the idea. One problem, of course, is out-of-state tuition. They might explore the possibility of contracting with other institutions to deliver courses originating at UW.

Person interviewed

Dr. Jack Ferver
University of Wisconsin - Extension

7. Beloit College

No interview was conducted as they indicated they did not wish to participate at this time.

VI. INTEREST IN UPPER DIVISION AND GRADUATE EDUCATION AMONG SEGMENTS OF THE ROCKFORD COMMUNITY (BUSINESS, EDUCATION, HEALTH)

In order to determine the interest among segments of the Rockford community for utilizing remote systems for delivering instruction to the Rockford area, interviews were conducted with officials of 14 organizations. These organizations represented not only the corporate sector but also educational, medical and social service agencies.

The organizations were selected by members of the task force. An official to be interviewed was then identified.

The 14 organizations employ approximately 20,000 individuals in the Rockford area. Of those 20,000 there would be approximately 6,763 individuals (33.8 percent) who would be potential candidates for upper division or graduate level coursework.

Without exception, all officials interviewed indicated their company encourages its employees to update skills through additional education. It came as no surprise that the most commonly stated barrier to continuing that education among their employees was that it is just not conveniently available.

Again, without exception, all officials indicated their company would like to see additional courses brought to the Rockford area. The most frequently mentioned fields or disciplines of study desired were engineering and business, but others included adult education, teacher training, computer science and general education coursework.

Seven, or 50 percent of the organizations indicated they would provide time for employees to participate in courses as long as the courses were work or skill related. Six, or 42.9 percent of the companies indicated they were either unsure of what the policy would be or that the provision of company time would be considered on an individual basis. Some of the companies unsure of the policies indicated that an exception would more than likely be made if educational opportunities were conveniently available. Only one of the organizations interviewed stated flatly there would be no company time available for employees to continue their education, work related or not.

All organizations indicated they would provide space to receive instruction (e.g., a classroom or seminar room), and the majority also would provide equipment necessary to receive the signal or for playback purposes. However, cost would be a

consideration before any definite decisions were made. In addition, before a few of the companies would invest in equipment, they would want to know how many employees would be participating in the course.

Organizations and officials interviewed

1. Business and Industry Concerns

Anderson Consolidated Industries, Inc.
Rockford, Illinois
Frank Meyers
Vice President, Human Resources

Beloit Corporation
Beloit, Wisconsin
William Mohr
Manager of Corporate Planning

GC Electronics
Rockford, Illinois
Kenneth Rolnicki
Senior Vice President

IBM
Rockford, Illinois
Ray Carlson, Manager

J.L. Clark Manufacturing
Rockford, Illinois
Bob Bjerke
Assistant Director, Employee Relations

Micro Switch
Freeport, Illinois
Larry Patterson
Manager, Employee Relations

Rockford Division of Borg-Warner
Rockford, Illinois
Ted Larson
Advertising Manager

Rockford Products
Rockford, Illinois
Bill Naill
Personnel Manager

Rockford Newspapers
Rockford, Illinois
Gordon Wolfley
Personnel Director

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Sundstrand Corporation
Rockford, Illinois
George Hill
Engineering Personnel Specialist

Twin Disc, Inc.
Rockford, Illinois
James E. Cuddeback
Plant Manager

2. Medical and Health Concerns

Singer Mental Health Center
Rockford, Illinois
Christine Gill
Labor Relations Administrator

SwedishAmerican Hospital
Rockford, Illinois
Unit Supervisor, Media Sources

3. Education Concerns

Rockford Board of Education
Rockford, Illinois
Don Erickson
Assistant Superintendent

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VII. RESULTS OF OPINION SURVEY TO INDIVIDUALS WITH NO CURRENT EXPOSURE TO REMOTE DELIVERY - GROUP 1 (See Section XI)

To determine the public interest in utilizing remote systems, two opinion surveys were administered to two different groups of students. The first group was composed of individuals with no current exposure to remote delivery. The survey for the first group was designed to gather information on preferences of remote systems and interest in enrolling in future credit classes delivered by remote means. Four hundred surveys were distributed to individuals enrolled in traditional on-campus and extension courses offered in Rockford, and to individuals living in the Rockford area not currently enrolled in any education program but with at least two years of college. A total of 188 (47%) were returned. The following is a breakdown of the results for this first group.

1. Sex (N=188)	Percent
Men	52.1
Women	47.9

2. Age (N=188)	Percent
19-24	9.6
25-29	23.9
30-34	22.9
35-39	19.7
40-44	13.8
45-49	5.9
50-54	2.7
55+	1.5

3. Residence (N=188)	Percent
Rockford - Loves Park	83.1
Winnebago County	14.5
Boone County	1.8
Wisconsin	.6

4. Occupation (N=188)	Percent
Business	20.2
Education	28.4
Engineering	27.3
Social Work	2.2

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Other	21.9
Student (full-time)	3.7
Unemployed	3.2
Housewife	2.7
Nursing	2.7
No response	2.7
Factory	1.0
Government	1.0
Police	1.0
Library Science	1.0
Medicine	1.0
Law	.5
Farming	.5
Miscellaneous	.9

5. Level of Education (N=188)

	Percent
2 years or less of college	9.6
2 years or more of college, but no degree	28.7
Bachelor's degree	44.1
Master's degree	12.2
Master's degree plus 30 hours	5.4

6. Degree most interested in continuing work on (N=188)

	Percent
Bachelor's	29.2
Master's	52.4
Doctorate	3.2
No interest in pursuing degree	15.2

7. Desired Courses (N=484)

Area	Percent
Management	10.7
Engineering	10.3
Elementary Education	7.0
Marketing	6.4
Accounting	5.8
Business Education	5.8
Finance	5.2
Mathematics	3.7
Economics	3.7
Special Education	3.5
Psychology	3.5
Educational Administration	3.3
Reading	3.1

Counselor Education	2.9
Library Science	2.5
Sociology	2.5
Secondary Education	2.5
Science	2.3
English	1.9
History	1.9
Adult Education	1.2
Instructional Technology	1.0
Home Economics	.8
Nursing	.8
Other	7.7

8. Familiarity with RRAC (N=188)

63.6% of those surveyed were familiar with the RRAC and its services.

9. Perceptions of degree opportunities within a 35-mile radius of Rockford.

A. For a bachelor's degree: (N=188)

51.9% feel there is ample opportunity
29.4% do not
18.7% are not sure

B. For a master's degree: (N=188)

41.9% feel there is ample opportunity
40.3% do not
17.8% are not sure

10. Distance individuals would be willing to travel for additional education. (N=188)

	Percent
5 miles or less	4.5
10 miles or less	14.0
15 miles or less	13.4
20 miles or less	21.8
25 miles or less	9.5
30 miles or less	4.5
35 miles or less	32.3

11. Reasons for wanting to continue education (N=188)

	Percent
To enhance career opportunities	23.4
For personal enrichment	5.9
Both of the above reasons	70.7

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12. Interest in remote teaching methods (N=188)

29.3% of the respondents have taken courses in the past (for credit) that were other than face-to-face.

85.2% of the respondents indicated they would enroll in courses delivered by television if available in their field.

82.2% would be interested in receiving courses over television channels they could receive at home.

26.4% of the respondents would only be interested in television courses that would allow for talk-back.

72.4% would be interested in telecourses even if offered only at specific locations in Rockford, but not for home viewing.

71.5% expressed an interest in packaged courses.

72.4% indicated they would be interested in courses delivered via the electronic blackboard.

13. Preferences for remote systems (N=188)

Survey participants were asked to rank order (1st - 4th choices) interactive television, broadcast television, the electronic blackboard, and packaged courses.

	Inter-active Percent	Broad-cast Percent	Elec. Blkbd. Percent	Pkged. Courses Percent
1st choice	45.5	30.8	25.6	13.4
2nd choice	36.4	19.5	31.4	17.4
3rd choice	10.9	36.5	22.4	22.6
4th choice	7.2	13.2	20.6	46.6

14. On-campus requirements for remote courses (N=188)

21.7% of the respondents would be willing to attend an on-campus session once, 28.9% would be willing to attend an on-campus session twice, 20.6% would attend three or more times, and 28.8% would not be interested in the remote delivery course if an on-campus session were required.

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VIII. RESULTS OF OPINION SURVEY TO INDIVIDUALS CURRENTLY ENROLLED IN REMOTE DELIVERY COURSES - GROUP 2 (See Section XII)

The second group of people surveyed was composed of students enrolled in classes being taught by three different methods of remote delivery: the electronic blackboard, broadcast television, and interactive television. A total of 326 surveys were distributed. The breakdown of surveys among the three systems is as follows:

GROUP	NUMBER DISTRIBUTED	NUMBER RETURNED	PERCENT
Electronic Blackboard	32	20	62.5
Interactive Television	200	70	35.0
Broadcast Television	94	60	63.8
TOTALS	326	150	46.0

1. Sex (N=150)

	Percent
Men	66.0
Women	34.0

2. Age (N=150)

	Percent
19-24	12.0
25-29	35.3
30-34	20.0
35-39	14.0
40-44	9.3
45-49	3.3
50-54	3.3
55+	2.8

3. Residence (N=150)

	Percent
Rockford - Loves Park	24.5
Winnebago County	23.8
Boone County	2.1
Chicago Area	48.2
Wisconsin	1.4

4. Occupation (N=150)

	Percent
Business	3.3
Education	39.3
Engineering	51.3
Other	6.1

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5. Level of Education (N=150)	Percent
2 years or less of college	1.3
More than 2 years, but no degree	7.4
Bachelor's degree	59.1
Master's degree	23.5
Master's degree + 30 hours	8.1
Doctorate	.6

6. Interest in continuing work toward a degree (N=150)	Percent
Bachelor's	9.4
Master's	59.7
Doctorate	6.0
No interest in obtaining a degree	24.9

7. Desired Courses (N=318)

Area	Percent
Engineering	20.1
Management	11.0
Elementary Education	7.3
Marketing	4.4
Educational Administration	4.4
Secondary Education	4.4
Business Education	4.1
Special Education	4.1
Economics	4.1
Psychology	4.1
Mathematics	3.5
Science	3.2
Counselor Education	2.8
Finance	2.6
Accounting	2.2
Reading	2.2
Art	1.9
English	1.6
Adult Education	.9
Sociology	.9
Instructional Technology	.6
Nursing	.6
History	.6
Home Economics	.6
Music	.6
Other	7.2

8. This section includes the results of how the students enrolled in remote delivery courses felt toward the technical aspects of the delivery. (N=150)

   -95.3 percent of the respondents felt the picture or visuals were displayed satisfactorily for following the lecture, copying materials, etc.

   -98 percent felt the audio was satisfactory.

   -53.1 percent of the respondents felt the talk-back feature allowed them to participate effectively. Only 8.7 percent did not feel that feature was effective. The other 40 percent did not have the talk-back feature.

   -46 percent indicated the course was occasionally pre-empted, cancelled, or delayed.

   -96.7 percent felt that overall the transmission of both audio and visual signals were satisfactory.

9. Effectiveness of remote delivery (N=150)

   In response to the statement "the way in which this course was taught results in better student learning:"

   43.7 percent answered Yes
   56.3 percent answered No

   75.8 percent of the respondents felt the material in these courses was as easy to follow as it would have been in a face-to-face situation.

   Only 19.3 percent felt the method of delivery interfered with the teaching/learning process. Among the reasons given for that interference:

   -On the electronic blackboard:

   1) Couldn't see where the instructor was pointing.
   2) The instructor was not familiar with the EB.
   3) Too much time required playing technician.
   4) When there is a question, one is reserved to interrupt the classes at different locations.

   -On courses delivered via open broadcast television:

   1) Too fast paced for note-taking. No opportunity for clarification of ideas. Too superficial.

2) Can't comment, or ask questions.
3) Personal relationship of teacher-student interaction is missed.
4) Too fast changing from one thing to another.

-On courses delivered via ITFS (interactive television):

1) Time lapse for talk-back discouraged discussion.
2) Sometimes handouts not sent, sometimes impossible to understand audio.
3) Instructor moves to another board, camera stays where he/she was.
4) Talk-back was awkward and ineffective.
5) Courier between remote sites and campus not that efficient.
6) Not enough time for taking notes.
7) Notes written by professors often difficult to see.
8) Only a small portion of displayed material visible at any one time. Thus we lost continuity.
9) Teachers need to learn how to teach on TV.
10) Hard to read board and hear class comments.

10. Teacher Accessibility (N=150)

66.9 percent felt the instructor was accessible to them outside of regular classroom time, 33.1 percent felt otherwise.

11. Willingness to attend on-campus sessions (N=150)

53.7 percent of the respondents would be willing to attend sessions held on campus. Of that 53.7 percent, 75 percent would be willing to attend once or twice, and 25 percent would be willing to attend on-campus sessions 3 or more times.

12. Interest in taking more courses taught via remote delivery (N=150)

95.2 percent would be interested in taking another course taught via some form of educational telecommunications.

13. Reasons for enrolling in courses delivered via remote systems (N=150)

-Saves travel time to main campus	94.1 percent
-Saves transportation costs	86.8 percent
-To enhance career opportunities	78.9 percent
-For personal enrichment	53.9 percent

14. Preferences for Remote Delivery Systems (educational telecommunications) (N=150)

Survey participants were asked to rank order (1st - 4th choices) interactive television, the electronic blackboard, broadcast television, and packaged courses.

	Inter-active Percent	Broad-cast Percent	Elec. Blkbd. Percent	Pkged. Courses Percent
1st choice	62.1	27.8	10.6	12.9
2nd choice	20.5	26.8	33.6	23.8
3rd choice	14.4	25.9	27.4	25.5
4th choice	3.0	19.5	28.4	37.8

When asked if they would have preferred another method of remote delivery for the course in which they were currently enrolled:

-In the broadcast television group: (N=60)

31.9 percent preferred the broadcast television method of their course.
53.2 percent would have preferred pre-recorded packaged courses.
12.8 percent would have preferred interactive television.
2.1 percent would have preferred the electronic blackboard.

-In the ITFS (interactive television) group: (N=70)

54.3 percent preferred the ITFS system.
17.4 percent would have preferred pre-recorded packaged courses.
10.9 percent would have preferred broadcast television.
10.9 percent would have preferred the electronic blackboard.
6.5 percent would have preferred some other method of instruction.

-In the electronic blackboard group: (N=20)

83.3 percent would have preferred interactive television.
8.3 percent would have preferred broadcast television.
8.4 percent preferred the electronic blackboard system.

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IX. Comments from individuals responding to surveys.

A. From individuals not currently enrolled in any education program.

-Cost would be an important factor in registering.

-Would be interested mostly for employee benefits.

-Rockford has a very poor choice of schools after RVC. For those of us who have to work for a living, we have no choice but to stop.

-This system is excellent for full time workers.

-We need a local MBA program.

-There is a demand for engineering courses in the Rockford area.

-Need this ASAP!

-I don't think there is any good substitute for the traditional instructor-student communication (face-to-face).

-Need larger variety of courses than is now available.

-Reliability of electronic blackboard needs improvement.

-I would not want to start a program unless I knew I could complete my degree locally.

-Would value remote delivery only if coupled with personal interaction (face-to-face).

-I have taken TV courses at Sundstrand; they are very effective.

B. From individuals enrolled in traditional extension courses, or on-campus courses (face-to-face):

-The gas situation has made it impossible to travel very far.

-I really prefer extension courses with a professor.

-In filling out this form, I find myself revolted by the whole idea.

-I feel it is important Rockford makes available an adequate education to the people who live here to support the business which exists here.

-I prefer professor in the classroom.

-These ideas seem to be a great substitute.

-Need some type of resource person for a course when offered via TV.

-I don't think telecommunications will effectively educate people.

-Keep the dollar and keep up the good work!

-Unfortunately I live in Normal; however this type of endeavor sounds exciting.

-Where are you going to get the money for this?

-Great! Need more master's credits in education courses.

-I think this is well developed and much needed service to offer the community for educational needs.

C. From individuals enrolled in electronic blackboard course:

-Electronic blackboard is almost as good as a live lecture. Time lag from mailing of homework was a problem.

-Electronic blackboard system is good. Instructors have small learning curve in using it. Some hardware failures usually due to misinformed personnel.

-Takes about two sessions to get used to method of presentation and the equipment. I would prefer the electronic blackboard to classroom instruction. Best suited to engineering, sciences, and math.

-Transfer of printed material, homework solutions, etc. is too slow to be any value to learning.

-Need to work on paper flow from instructor to student and conversely.

D. From individuals enrolled in interactive television course.

-Two cameras should be used. One should be focused on the instructor, and the other should be focused on what was previously written on the board. The picture should then be split between the two.

-I have found that interactive television is an effective way to teach many courses.

-After having taken five interactive TV courses, the main criteria for success is the instructor, not the teaching medium.

-Courier service for homework, exams, etc., was a big problem.

-These systems are a tremendous boon. The only limitation is the technology. For a marginal increase in expense for equipment, the effectiveness could be vastly increased.

-Live is better, spontaneity is enhanced, group participation also; however, interactive TV is the best alternative.

-In theory, any of the telecommunications systems described here could be effective, particularly interactive television, which allows the students to see the instructor and his slides and examples better than an electronic blackboard and also allows better communication than broadcast TV or packaged courses.

-Often the questions asked in the classroom cannot be heard at the remote site.

-This system saves lots of traveling time.

-Too many people involved in live TV.

-The system is basically good, but the instructors must perceive the student's problems (off-campus student) and learn to teach in this method more effectively.

-It works well!!

-Video quality is not tops, a little grainy, camera operators need to pay attention and remember long shot capability.

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-I wouldn't be able to complete my degree without the wonderful TV courses.

-I do not feel that a student can adequately learn a subject by television instruction.

-I feel the talk-back feature is essential.

E. From individuals enrolled in broadcast television course.

-This course offered the opportunity to see and hear instructors such as Wm. Glasser who would not be part of an on-campus program.

-The broadcast time could have been later on Sunday for church go-ers.

-Program cancelled with insufficient notice.

-I was very pleased with this course.

-The course was fantastic. I really enjoyed it and looked forward to each lesson. It was a delight to be able to see it at home. Extremely convenient.

-Once the show was pre-empted, once they showed the same show twice--this is an inconvenience to say the least.

-I feel the TV station should stick to the planned schedule and not cancel days or times.

-Course was shown at convenient times.

-It was fun and interesting.

-Enjoyed broadcast television.

-I think the course would be more personal and thus of more value if there were on-campus sessions at the beginning, end, and maybe in the middle. The Rockford Regional Academic Center has been very helpful!

-Besides the impersonality of broadcast TV, the apparent age of the material detracted from the credibility of the course content.

-A big advantage of packaged courses is the opportunity of hearing experts in the field speak.

-TV courses are not good for all courses.

-The course was helpful, and I really like the way it was presented.

-This type of course was the ideal answer to meeting a requirement in my degree program.

-Offer additional courses.

-Very pleased with course content and presentation.

-I was very pleased with my TV course from NIU and found the ideas practicable and useable. I am a better teacher, I feel, for having taken the course.

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X. RECOMMENDATIONS

The time seems to be appropriate for steps to be taken toward beginning to provide instruction to Rockford by remote means. The following guidelines might prove to be the most effective for implementing the goals of the Remote Delivery Task Force.

1. Continue to work as closely as possible with the two RRAC member institutions that have already offered instruction by remote means--the University of Illinois and Northern Illinois University. The institutions should be encouraged to build upon what has been offered in the past, and proven successful.

2. While duplication of course offerings is not necessarily bad, an attempt should be made to avoid duplicating courses already offered in the Rockford area through Rockford College and Rock Valley Community College.

3. The RRAC should give consideration to offering the programs in which survey respondents expressed an interest. An attempt should be made to offer programs that would supplement what is currently available. (See recommendation #2.) Survey respondents indicated the greatest need was for engineering and business curriculums.

4. Attempt to work with what is presently available via remote means. IIT offers an opportunity for bringing courses into Rockford by interactive television or videotape delay. Rather than invest heavily at this time in equipment to boost the signal for bringing courses into Rockford via interactive television, the RRAC should initiate a pilot project with IIT to deliver selected courses by videotape delay.

5. Satellite delivery seems to be too expensive and not practical for an in-state system. Satellite is most practical when used nationally. Future possibility for this system should not be ruled out altogether, though. Since it is relatively inexpensive to receive the signal, other sending organizations might one day broadcast appropriate material.

6. An interactive television system of delivery (with talk-back) is the preference among individuals with no current exposure to remote systems, but does not seem to be the most practical at this time because of financial constraints.

7. The RRAC should not concentrate on offering courses by remote means by only one method, but should encourage institutions to establish course offerings by a variety of methods. It appears that some courses "lend" themselves to one system. Engineering, with complex formulas, etc., lends itself to the electronic blackboard more than an elementary education course would.

8. All member institutions of the RRAC that have expressed an interest should be encouraged to offer courses via remote delivery. Continue to work with members which might not be capable of providing credit courses via remote delivery at this time, but do provide support to the RRAC. Give consideration to adding institutions to the consortium that are now providing instruction via remote means.

9. Serious consideration should be given to applying for a grant (possibly from the Corporation for Public Broadcasting, or the Carnegie Corporation) for funds to establish a program of delivering instruction by various remote methods from selected institutions to specific sites. This would be among the first programs to offer upper division and graduate level instruction by remote means from different schools using a consortium as the vehicle through which the courses would be channeled. With funding there would probably be very few obstacles to overcome in interesting member schools to establish a remote delivery system for selected courses.

SECTION XI

GROUP 1 OPINIONNAIRE

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Section 1 - Background data

1. Sex:
   ( ) Male
   ( ) Female

2. What is the zip code of your mailing address?

   _ _ _ _ _

3. Age:

( ) 18 or less	( ) 35-39
( ) 19-24	( ) 40-44
( ) 25-29	( ) 45-49
( ) 30-34	( ) 50-54
	( ) 55 +

4. Level of education:
   ( ) 2 years, or less of college
   ( ) More than 2 years of college, but no bachelor's degree
   ( ) Bachelor's degree
   ( ) Master's degree
   ( ) Master's degree +30 hours
   ( ) Doctorate

5. I am currently employed in the field of:
   ( ) Business
   ( ) Education
   ( ) Engineering
   ( ) Social Work
   ( ) Other (please state) _____

6. I would be interested in obtaining the following degree:
   ( ) Bachelor's degree
   ( ) Master's degree
   ( ) Doctorate
   ( ) I am not interested in obtaining a degree

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7. I would be interested in obtaining a degree and/or enrolling in classes for credit in the following area(s): (check all that apply):
   ( ) Accounting
   ( ) Adult Education
   ( ) Business Education
   ( ) Counselor Education
   ( ) Economics
   ( ) Educational Administration
   ( ) Elementary Education
   ( ) Engineering
   ( ) English
   ( ) Finance
   ( ) History
   ( ) Home Economics
   ( ) Instructional Technology (Media)
   ( ) Library Science
   ( ) Management
   ( ) Marketing
   ( ) Mathematics
   ( ) Music
   ( ) Nursing
   ( ) Psychology
   ( ) Reading
   ( ) Science
   ( ) Secondary Education
   ( ) Special Education
   ( ) Sociology
   ( ) Theater Arts
   ( ) Other (please specify)

Section II

Background data on knowledge of Rockford educational opportunities.

8. I am familiar with the Rockford Regional Academic Center.
   ( ) Yes
   ( ) No

9. I feel there is ample opportunity within a 35 mile radius of Rockford for completing a bachelor's degree in my field.
   ( ) Yes
   ( ) No
   ( ) Don't Know

10. I feel there is ample opportunity within a 35 mile radius of Rockford for completing a master's degree in my field.
   ( ) Yes
   ( ) No
   ( ) Don't Know

11. I would not be interested in additional education if I had to travel more than
( ) 5 ( ) 25
( ) 10 ( ) 30
( ) 15 ( ) 35
( ) 20 miles from my home or office.

12. I would be interested in additional education to:
(check both if applicable)
( ) Enhance my career opportunities
( ) Personal enrichment

Section III

13. I have taken courses for credit in the past that were other than face-to-face instruction (e.g., television, newspaper, correspondence, etc.)
( ) Yes
( ) No

14. If available in my field, or area of interest, I would enroll in courses for credit delivered by television.
( ) Yes
( ) No

15. I would be interested in taking for credit television courses over channels I could receive at my home.
( ) Yes
( ) No

16. I would only be interested in television courses for credit that would allow me to talk-back to the instructor during class-time (called interactive television).
( ) Yes
( ) No

17. I would be interested in a television course for credit even if I could not talk-back to the instructor during class time.
( ) Yes
( ) No

18. I would be interested in a television course for credit even if offered only at specific locations within the Rockford area. (Reception would not be available for private homes.)
( ) Yes
( ) No

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19. I would be interested in "packaged courses" for credit (videotape, audiotape, 16mm film, etc.), available at specific locations in Rockford for viewing/listening at my convenience. (In some cases these courses could be taken home.)
( ) Yes
( ) No

20. I would be interested in courses for credit delivered via the electronic blackboard (a device much like a regular blackboard that transmits instructional visuals from the main campus by a telephone line to extension locations. A second telephone line permits transmission of two-way audio so students in the remote location can participate in discussions with the professor).
( ) Yes
( ) No

21. Which of the following educational telecommunications systems do you feel would be best for delivering instruction to remote areas regardless of course content? (please rank order, 1= first choice, 2=second choice, etc.)
( ) Interactive television (live television with talk-back capability at select locations in the Rockford area; no home reception would be available).
( ) Broadcast television (over a local station allowing you to receive it in your home, office, etc. No talk-back capability).
( ) The electronic blackboard. (see item 20 for description)
( ) Packaged courses. (see item 19 for description)
( ) Other (please state)

22. I would still be interested in a remote delivery system even if it required me to attend a session on the campus offering the course:
( ) Once
( ) Twice
( ) Three times or more
( ) Would not be interested if any on-campus session was required.

23. Additional comments: _____

_____

_____

_____

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SECTION XII

GROUP 2 OPINIONNAIRE

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Section 1 - Background data

1. Sex:
   ( ) Male
   ( ) Female

2. What is the zip code of your mailing address?

   _ _ _ _ _

3. Age:

( ) 18 or less	( ) 35-39
( ) 19-24	( ) 40-44
( ) 25-29	( ) 45-49
( ) 30-34	( ) 50-54
	( ) 55 +

4. Level of education:
   ( ) 2 years, or less of college
   ( ) More than 2 years of college, but no bachelor's degree
   ( ) Bachelor's degree
   ( ) Master's degree
   ( ) Master's degree +30 hours
   ( ) Doctorate

5. I am currently employed in the field of:
   ( ) Business
   ( ) Education
   ( ) Engineering
   ( ) Social Work
   ( ) Other (please state) _____

6. I would be interested in obtaining the following degree:
   ( ) Bachelor's degree
   ( ) Master's degree
   ( ) Doctorate
   ( ) I am not interested in obtaining a degree

7. I would be interested in obtaining a degree and/or enrolling in classes for credit in the following areas: (check all that apply)
   ( ) Accounting
   ( ) Adult Education
   ( ) Art
   ( ) Business Education
   ( ) Counselor Education
   ( ) Economics
   ( ) Educational Administration
   ( ) Elementary Education
   ( ) Engineering
   ( ) English
   ( ) Finance
   ( ) History
   ( ) Home Economics
   ( ) Instructional Technology (Media)
   ( ) Library Science
   ( ) Management
   ( ) Marketing
   ( ) Mathematics
   ( ) Music
   ( ) Nursing
   ( ) Psychology
   ( ) Reading
   ( ) Science
   ( ) Secondary Education
   ( ) Special Education
   ( ) Sociology
   ( ) Theater Arts
   ( ) Other (please state) _____

Section II

The following statements refer to the technical aspects of the delivery method.

8. Was the reception of the picture or visuals displayed satisfactorily for following the lecture, copying materials, etc.?
   ( ) Yes
   ( ) No

9. Was the audio satisfactory?
   ( ) Yes
   ( ) No

10. If there was talk-back capability, did this feature allow you to participate effectively?
   ( ) Yes
   ( ) No
   ( ) There were no provisions for talk-back during class

11. If this was a broadcast TV course, was the course ever pre-empted, cancelled or delayed?
( ) Yes
( ) No
( ) This was not a broadcast TV course

12. Overall, the transmission of both audio and visual signals was satisfactory.
( ) Yes
( ) No

Section III

The following statements refer to the effectiveness of educational telecommunications systems in dealing with logistical problems of the teaching/learning process, and NOT TO COURSE CONTENT.

13. The way in which this course was taught (interactive television, broadcast television, or electronic blackboard) results in better student learning.
( ) Yes ( ) No

14. The material in this course was as easy to follow delivered by an educational telecommunications method as it would have been in a face-to-face situation.
( ) Yes ( ) No

15. Was the instructor accessible to you outside of regular class time?
( ) Yes ( ) No

16. Would you be willing to attend sessions on the campus of the school offering the course?
( ) Yes ( ) No

17. If yes to item 16, how many times would you be willing to attend those on-campus sessions?
( ) 1-2 times ( ) 3 or more

18. Did the method of delivery interfere with the teaching/learning process?
( ) Yes ( ) No

19. If yes to item 18, in what way did the delivery method interfere?

_____

20. I would take another course that was taught via educational telecommunications.
( ) Yes ( ) No

21. Among the reasons I enrolled in a course delivered by an educational telecommunications method are: (check all that apply)
    ( ) Saves travel time to main campus.
    ( ) Saves transportation costs, (gasoline, trainfare, etc.)
    ( ) To enhance career opportunities. (job placement, advancement, etc.)
    ( ) For personal enrichment
    ( ) Other (please state) _____

Section IV

The following refer to your preferences for educational telecommunications.

22. If you would have preferred another method of educational telecommunications delivery for this course, which of the following would it be:
    ( ) Interactive television (live television with talk-back capability at select locations in your area).
    ( ) Broadcast television. (Over a local station allowing you to receive it in your home, office, etc. No talk-back capability.)
    ( ) The electronic blackboard. (A device much like a regular blackboard that transmits instructional visuals from the main campus by a telephone line to extension locations. A second telephone line permits transmission of two-way audio so students in the remote location can participate in discussions with the professor.)
    ( ) Pre-recorded packaged courses available for viewing/listening at your convenience in specific locations (e.g., libraries, places of employment, etc.). In some cases these courses could be taken home.
    ( ) Other (please state) _____

    _____

23. Which of the following educational telecommunications systems do you feel would be best for delivering instruction to remote areas regardless of course content: (Please rank order, 1=first choice, 2=second choice, etc.)
    ( ) Interactive television. (See item 22 for description)
    ( ) Broadcast television. (See item 22 for description)
    ( ) The electronic blackboard. (See item 22 for description)
    ( ) Packaged courses. (See item 22 for description)
    ( ) Other (please state) _____

24. Additional comments: _____

    _____